

FAIL FIXED FUEL METERING DEVICE AND METHOD FOR
PROVIDING BUMPLESS TRANSFER TO BACKUP

ABSTRACT

A fuel metering device (101) and method for metering fuel to an engine
5 (129) provides bumpless transfer to a backup mode. A common cavity
(125) provides pressure relief, fuel metering and bypass of fuel flow. A
metering valve (120) for scheduling fuel flow to the engine (129) and the
metering valve (120) is controlled in either a primary mode or a backup
mode. A pressure relief valve (123) limits the maximum pump discharge
10 pressure of a fuel pump. A bypass valve (122) maintains a constant
pressure across the metering valve (120) by redirecting non-metered fuel
flow back to a pump stage inlet. An electrical clutch (131) determines
whether the metering valve (120) function is accomplished by said
primary mode or said backup mode. Bumpless transfer to a backup is
15 accomplished automatically.